

IN THE CLAIMS:

On page 20 at line 1, please delete “Claims” and insert --What is Claimed is:-- therefor.

Please amend the claims as follows:

1. (currently amended) A method of filtering a speech signal, ~~characterized by the method~~ involving the steps of providing a filter ~~[(404)]~~ suited for reduction of distortion caused by speech coding ; estimating acoustic noise in said speech signal ; adapting said filter in response to the estimated acoustic noise to obtain an adapted filter; and applying said adapted filter to said speech signal so as to reduce acoustic noise and distortion caused by speech coding in said speech signal.
2. (currently amended) ~~[[A]]~~ The method as defined in claim 1, wherein said step of adapting said filter involves adjusting filter coefficients of said filter ~~[(404)]~~.
3. (currently amended) ~~[[A]]~~ The method as defined in claim 2, wherein said steps of estimating, adapting and applying are performed for portions of said speech signal which contain speech as well as for portions which do not contain speech.
4. (currently amended) ~~[[A]]~~ The method as defined in ~~any of claims~~ claim 2 ~~[[or 3]]~~, wherein said filter ~~[(404)]~~ includes a short-term filter function designed for attenuation between spectrum formant peaks of said speech signal and wherein said filter coefficients include at least one coefficient that controls the frequency response of said short-term filter function.
5. (currently amended) ~~[[A]]~~ The method as defined in claim 4, wherein said filter ~~[(404)]~~ includes a spectrum tilt compensation function and wherein said filter coefficients include at least one coefficient that controls said spectrum tilt compensation function.

6. (currently amended) [[A]] The method as defined in ~~any preceding~~ claim 1, wherein acoustic noise in said speech signal is estimated as relative noise energy (SNR) and noise spectrum tilt.
7. (currently amended) [[A]] The method as defined in ~~any of claims 2-6~~ claim 2, wherein said step of adapting is performed by selecting values for said filter coefficients from a lookup table [(430)], which maps a plurality of values [(432)] of estimated acoustic noise to a plurality of filter coefficient values [(434)].
8. (currently amended) [[A]] The method as defined in ~~any preceding~~ claim 1, wherein said steps of estimating, adapting and applying are performed after a step of decoding said speech signal.
9. (currently amended) [[A]] The method as defined in ~~any one of claims 1-7~~ claim 1, wherein said steps of estimating, adapting and applying are performed before a step of encoding said speech signal.
10. (currently amended) [[A]] The method as defined in ~~any preceding~~ claim 1, wherein said speech signal comprises speech frames and wherein said steps of estimating, adapting and applying are performed on a frame-by-frame basis.
11. (currently amended) [[A]] The method as defined in claim 7, further comprising the initial steps of generating said lookup table by: adding different artificial noise power spectra having given parameter (s) of acoustic noise to different clean speech power spectra ; optimizing a predetermined distortion measure by applying said filter [(404)] to different combinations of clean speech power spectra and artificial noise power spectra ; and for said different combinations, saving in said lookup table those filter coefficient values, for which said predetermined distortion measure is optimal, together with corresponding value (s) of said given parameter (s) of acoustic noise.

12. (currently amended) ~~[[A]]~~ The method as defined in claim 11, wherein said predetermined distortion measure includes Spectral Distortion (SD).

13. (currently amended) ~~[[A]]~~ The method as defined in claim 11 [[or 12]], wherein said given parameters of acoustic noise include relative noise energy (SNR) and noise spectrum tilt.

14. (currently amended) ~~[[A]]~~ The method as defined in claim 10 ~~when dependent on claim 6,~~ wherein acoustic noise in said speech signal is estimated as relative noise energy (SNR) and noise spectrum tilt, the method comprising the further steps, after said step of estimating acoustic noise, of deciding whether the estimated relative noise energy for a current speech frame is below a predetermined threshold; and if so, not performing said steps of adapting filter coefficients and applying said filter, and instead performing energy attenuation on the current speech frame so as to suppress acoustic noise in a speech pause.

15. (currently amended) ~~[[A]]~~ An electronic apparatus having a speech filtering device ~~[[(400)]]~~ for a speech signal, characterized by the speech filtering device comprising:
a filter ~~[[(404)]]~~ suited for reduction of distortion caused by speech coding ;
means ~~[[(410)]]~~ for estimating acoustic noise in said speech signal; and
means ~~(420,430)~~ for adapting said filter in response to the estimated acoustic noise,
wherein said filter, when applied to said speech signal, reduces acoustic noise and distortion caused by speech coding in said speech signal.

16. (currently amended) ~~A speech filtering device~~ The electronic apparatus as in claim 15, wherein said means ~~(420,430)~~ for adapting said filter ~~[[(404)]]~~ is arranged to adjust filter coefficients of said filter in response to the estimated acoustic noise.

17. (currently amended) ~~A speech filtering device~~ The electronic apparatus as in claim 16, wherein said means for estimating, said means for adapting and said filter are arranged to operate on portions of said speech signal which contain speech as well as on portions which do not contain speech.

18. (currently amended) ~~A speech filtering device~~ The electronic apparatus as in claim 16 [[or 17]], wherein said filter [[(404)]] includes a short-term filter function designed for attenuation between spectrum formant peaks of said speech signal and wherein said filter coefficients include at least one coefficient that controls the frequency response of said short-term filter function.

19. (currently amended) ~~A speech filtering device~~ The electronic apparatus as in ~~any of claims 15-18~~ claim 15, wherein said means [[(410)]] for estimating acoustic noise is arranged to estimate it as relative noise energy (SNR) and noise spectrum tilt.

20. (currently amended) ~~A speech filtering device~~ The electronic apparatus as in ~~any one of claims 16-19~~ claim 16, wherein said means (420,430) for adapting said filter [[(404)]] comprises a lookup table [[(430)]], which maps a plurality of values [[(432)]] of estimated acoustic noise to a plurality of filter coefficient values [[(434)]].

21. (currently amended) ~~A speech filtering device~~ The electronic apparatus as in ~~any one of claims 15-20~~ claim 15, wherein said speech signal comprises speech frames and wherein said means for estimating, said means for adapting and said filter are arranged to operate on said speech signal on a frame-by-frame basis.

22. (cancelled)

23. (cancelled)

24. (cancelled)

25. (cancelled)

26. (currently amended) A computer program product directly loadable into a memory [[(242)]] of a processor [[(240)]], where the computer program product comprises program code for performing the method according to ~~any of claims 1-14~~ claim 1 when executed by said processor.

27. (cancelled)

28. (cancelled)

29. (cancelled)

30. (cancelled)

31. (cancelled)